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Synopsis of the Parasites of Vertebrates of Canada

Edited by Murray J. Kennedy

Cestodes of Waterfowl (Anseriformes)

J. Daniel McLaughlin

Alberta
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Edited by Murray J. Kennedy[1]

Cestodes of Waterfowl (Anseriformes)

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Abstract

This synopsis contains Parasite-Host and Host-Parasite lists of 76 species of cestodes from 30 species of wild waterfowl (Anseriformes) from Canada. Records from natural and experimental infections in domestic waterfowl and from experimental infections in wild species are also included.

Introduction

This synopsis includes records published in the primary literature up to December 1988. No attempt has been made to extract records from unpublished theses or from federal or provincial government reports. Additional records therefore likely exist.

The taxonomic arrangement of the cestodes listed in this synopsis generally follows that of Schmidt (1986) although the genera *Tschertkovilepis*, *Wardium* and *Wardoides* (Hymenolepididae) have been retained.

Host nomenclature (scientific and common) conforms to that in the 1983 A.O.U. checklist (Checklist of North American Birds: the species of birds of North America from the Arctic through Panama, including the West Indies and Hawaiian Islands. American Ornithologists Union Washington D.C.).

In keeping with the format of previous issues of the Synopsis the following information is provided for each parasite species listed:

1) The **current scientific name**, including author(s) and date(s), followed by any recognized synonyms that may have been used in establishing the Canadian record(s). No attempt has been made to evaluate systematically the validity of published records, but attention has been drawn to obvious errors.

2) The **site** of occurrance of the parasite in its host(s). When the site was not given in the original reference it was determined from other records.

3) The **hosts**. Only currently accepted scientific names are used. Numbers in parentheses after each host name correspond to the numbers assigned to the references establishing the particular parasite host records.

4) **Distribution (Dist.)** Species distribution is indicated by Provincial or Territorial boundaries listed in alphabetical order as follows: Alta (Alberta), BC (British Columbia), Man (Manitoba), NB (New Brunswick), Nfld (Newfoundland and Labrador), NS (Nova Scotia), NWT (Northwest Territories), Ont (Ontario), PEI (Prince Edward Island), Que (Québec), Sask (Saskatchewan) and YT (Yukon Territory).

5) Authors responsible for **records** are listed in chronological order of published records. To enable the reader to grasp at a glance the author(s) responsible for particular parasite-host-locality records, references listed under "Records" have been numbered and the corresponding number placed after the host name. Each reference is followed by the locality or localities from which the parasite(s) was (were) reported. When only one host is listed for a particular parasite the references are not numbered and, when all records are from the same locality the latter is not listed after the Author's names.

6) Under **remarks**, explanatory comments as required are offered on systematics, nomenclature, synonyms of parasites, sites within hosts and whether immature or gravid specimens were recovered in experimental life cycle studies.

In the Host-Parasite List, only currently valid names are used. Host synonyms are included only when used in establishing Canada records.

Subfamilies, tribes, genera and species have been listed alphabetically. Sections on domestic ducks and geese have been included. The geographic distribution is given in parentheses after the name of each parasite species.

To facilitate access to information in the parasite-host and host-parasite lists, the synopsis concludes with an **INDEX** to parasite and host scientific names.

PARASITE-HOST LIST

ORDER PSEUDOPHYLLIDEA

FAMILY DIPHYLLOBOTHRIIDAE

Schistocephalus solidus (Mueller, 1776)
Site: small intestine
Hosts: *Lophodytes cucullatus* (2)
Mergus merganser (1)
Dist: BC, Ont
Records: 1. Wardle 1933 (BC); 2. Bain and Threlfall 1977 (Ont)

Ligula intestinalis (Linnaeus, 1758)
Site: small intestine
Hosts: *Anas platyrhynchos* (3)
Mergus merganser (1,2)
Dist: BC, Man, Que
Records: 1. Wardle 1933 (BC); 2. Mahon 1956 (Que); 3. Crichton and Welch 1972 (Man)

ORDER APORIDEA

FAMILY NEMATOPARATAENIIDAE

Gastrotaenia cygni Wolffhügel, 1938
Site: gizzard, under lining
Hosts: *Anas acuta* (2,3)
A. americana (3)
A. clypeata (3)
A. crecca (3)
A. discors (3)
A. platyrhynchos (2,3)
A. strepera (3)
Aythya affinis (3)
A. americana (3)
A. valisineria (1,3)
Bucephala albeola (3)
Dist: Man
Records: 1. Cornwell and Cowan 1963; 2. Crichton and Welch 1972; 3. McLaughlin and McGurk 1987

ORDER CYCLOPHYLLIDEA

FAMILY HYMENOLEPIDIDAE
SUBFAMILY FIMBRIARIINAE

Fimbriaria fasciolaris (Pallas, 1781)
Site: small intestine
Hosts: *Aix sponsa* (12)
Anas acuta (3,7,11,12)
A. clypeata (3)
A. crecca (11,12)
A. discors (4,11,12)
A. platyrhynchos (6*,7,11)
A. rubripes (8,11,12)
A. strepera (3,6*)
Anatidae (5,14)
Domestic ducks (5*)
Aythya affinis (5*,6*,9,13)
A. americana (6*)
A. collaris (11,12)
A. marila (11,12)
A. valisineria (2,6*)
Bucephala clangula (11,12)
Mergus merganser (1)
Branta bernicla (10)
Chen caerulescens (10)
Dist: Alta, BC, Man, NB, NWT, Que
Records: 1. Wardle 1933 (BC); 2. Cornwell and Cowan 1963 (Man); 3. Buscher 1965 (Man); 4. Buscher 1966 (Man); 5. Denny 1969 (Alta); 6. Podesta and Holmes 1970 (Alta); 7. Crichton and Welch 1972 (Man); 8. McLaughlin and Burt 1973 (NB); 9. Hair and Holmes 1975 (Alta); 10. Neraasen and Holmes 1975 (NWT); 11. McLaughlin and Burt 1979a (NB); 12. McLaughlin and Burt 1979b (NB); 13. Bush and Holmes 1986a,b (Alta); 14. Hoeve and Scott 1988 (Que)
Remarks: * Experimental infections producing mature cestodes.

Fimbriarioides intermedia (Fuhrmann, 1913)
Site: duodenum, small intestine
Host: *Somateria mollissima* (1,2)
Dist: Nfld, NWT
Records: 1. Cooper 1921 (NWT); 2. Bishop and Threlfall 1974 (Nfld)

Fimbriarioides sp.
Site: small intestine
Hosts: *Melanitta nigra*
M. perspicillata
Dist: BC, NB, Nfld
Record: Bourgeois and Threlfall 1982

SUBFAMILY HYMENOLEPIDINAE

Anatinella spinulosa (Dubinina, 1953)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975

Aploparaksis furcigera (Nitzsch in Rudophi, 1819)
Site: intestine, caecum
Hosts: *Anas acuta* (1)
A. discors (2,4)
A. rubripes (3,4)
A. strepera (1)
Aythya collaris (4)
Dist: Man, NB
Records: 1. Buscher 1965 (Man); 2. Buscher 1966 (Man); 3. McLaughlin and Burt 1973 (NB); 4. McLaughlin and Burt 1979a,b (NB)

Aploparaksis veitchi Baylis, 1934
Site: intestine
Hosts: *Anas clypeata*
A. strepera
Dist: Man
Record: Buscher 1965
Remarks: Spasskii and Freze (1961) listed this species as *species inquirenda*.

Aploparaksis sp.
Site: intestine
Host: *Somateria mollissima*
Dist: NWT
Record: Cooper 1921

Cloacotaenia megalops (Nitzsch in Creplin, 1829)
Syn: *Hymenolepis megalops* (Nitzsch in Creplin, 1829)
Site: cloaca; occasionally in ureter (Wobeser 1981) and bursa of Fabricius (Bourgeois and Threlfall 1982)
Hosts: *Anas acuta* (2,4,8)
A. americana (7)
A. clypeata (2)
A. discors (3,7)
A. platyrhynchos (4,8)
A. strepera (2)
Aythya affinis (5)
A. valisineria (1)
Melanitta fusca (9)
Chen caerulescens (6)
Dist: Alta, BC, Sask, Man, NB, NWT
Records: 1. Cornwell and Cowan 1963 (Man); 2. Buscher 1965 (Man); 3. Buscher 1966 (Man); 4. Crichton and Welch 1972 (Man); 5. Hair and Holmes 1975 (Alta); 6. Neraasen and Holmes 1975 (NWT); 7. McLaughlin and Burt 1979a,b (NB); 8. Wobeser 1981 (Sask); 9. Bourgeois and Threlfall 1982 (BC)
Remarks: Specimens found in ureters were immature (Wobeser 1981).

Dicranotaenia coronula (Dujardin, 1845)
Syn: *Hymenolepis coronula* (Dujardin, 1845)
Site: small intestine
Hosts: *Anas platyrhynchos* (5)
A. rubripes (2,5)
Domestic ducks (1)
Aythya affinis (3,6)
A. collaris (5)
A. marila (5)
Bucephala clangula (5)
Branta bernicla (4)
Chen caerulescens (4)
Dist: Alta, NB, NWT, Ont
Records: 1. Schofield 1932 (Ont); 2. McLaughlin and Burt 1973 (NB); 3. Hair and Holmes 1975 (Alta); 4. Neraasen and Holmes 1975 (NWT); 5. McLaughlin and Burt 1979a,b (NB); 6. Bush and Holmes 1986a,b (Alta)
Remarks: Schofield (1932) reported this helminth as a possible cause of mortality in a flock of domestic ducks.

Diorchis asiatica Spasskii, 1963
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975

Diorchis bulbodes Mayhew, 1929
Site: small intestine
Hosts: *Anas acuta* (1)
A. rubripes (2,4)
Aythya affinis (3)
Dist: Alta, Man, NB
Records: 1. Buscher 1965 (Man); 2. McLaughlin and Burt 1973 (NB); 3. Hair and Holmes 1975 (Alta); 4. McLaughlin and Burt 1979a,b (NB)

Diorchis excentricus Mayhew, 1925
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Diorchis inflata (Rudolphi, 1819)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Diorchis microcirrosa Mayhew, 1929
Site: small intestine
Host: *Anas discors*
Dist: NB
Records: McLaughlin and Burt 1979a,b

Diorchis nyrocae Yamaguti, 1935
Site: small intestine
Hosts: *Anas acuta* (1,3)
A. clypeata (1)
A. discors (2)
A. platyrhynchos (3)
Dist: Man
Records: 1. Buscher 1965; 2. Buscher 1966; 3. Crichton and Welch 1972

Diorchis nyrocoides Spasskaja, 1961
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975

Diorchis ransomi Schultz, 1940
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975
Remarks: More frequently found in *Fulica americana* and recorded from this host in Manitoba (McLaughlin and Burt 1975). Schmidt (1986) has included this species in the genus *Schillerius* Yamaguti, 1959.

Diorchis spinata Mayhew, 1929
Site: small intestine
Hosts: *Anas strepera* (1)
Aythya affinis (2)
Dist: Alta, Man
Records: 1. Buscher 1965 (Man); 2. Hair and Holmes 1975 (Alta)

Diorchis stefanskii Czaplinski, 1956
Site: small intestine
Hosts: *Aythya affinis* (2)
Branta bernicla (1)
Chen caerulescens (1)
Dist: Alta, NWT
Records: 1. Neraasen and Holmes 1975 (NWT); 2. Hair and Holmes 1975 (Alta)

Diorchis spp.
Site: small intestine
Hosts: Anatidae (3)
Aythya affinis (1,2)
Dist: Alta, Que
Records: 1. Hair and Holmes 1975 (Alta); 2. Bush and Holmes 1986a,b (Alta); 3. Hoeve and Scott 1988 (Que)

Drepanidotaenia barrowensis (Schiller, 1952)
Site: small intestine
Hosts: *Anser albifrons*
Branta bernicla
Chen caerulescens
Dist: NWT
Record: Neraasen and Holmes 1975
Remarks: Schmidt (1986) has included this species in both *Drepanidotaenia* and *Microsomacanthus*.

Drepanidotaenia lanceolata (Bloch, 1782)
Syn: *Hymenolepis lanceolata*
Site: small intestine
Hosts: *Branta bernicla* (2)
B. canadensis (3)
Chen caerulescens (1,2)
Dist: NB, NWT, Que
Records: 1. Mahon 1956 (Que); 2. Neraasen and Holmes 1975 (NWT); 3. McLaughlin and Burt 1979a,b (NB)

Echinocotyle rosseteri (Blanchard, 1891)
Site: duodenum, small intestine
Hosts: *Anas acuta* (2)
A. clypeata (1,2)
A. crecca (1,5)
A. discors (1,3,5)
A. rubripes (4,5)
Dist: Man, NB, Que
Records: 1. Mahon 1956 (Que); 2. Buscher 1965 (Man); 3. Buscher 1966 (Man); 4. McLaughlin and Burt 1973 (NB); 5. McLaughlin and Burt 1979a,b (NB)
Remarks: Specimens described by Mahon (1956) differ from those described by other authors and are likely not *E. rosseteri* (McLaughlin and Burt 1979a).

Hispaniolepis arcuata (Kowalewski, 1904)
Syn: *Hymenolepis arcuata* Kowalewski, 1904
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Hymenolepis albertensis Denny, 1969
Site: small intestine
Hosts: Domestic duck (1*)
Aythya affinis (1+,2)

A. americana (1+)
Melanitta fusca (1)
Dist: Alta
Records: 1. Denny, 1969; 2. Bush and Holmes 1986a
Remarks: + Experimental infections producing mature cestodes. *Experimental infections producing immature cestodes.

Hymenolepis anatina (Krabbe, 1869)
Site: small intestine
Hosts: *Anas acuta* (1)
A. discors (2)
Dist: Man
Records: 1. Buscher 1965; 2. Buscher 1966
Remarks: Schmidt (1986)has listed this species in *Echinocotyle* Blanchard (1891). According to McDonald (1969), *H. anatina* is unrecognizable. Regardless, the sucker armature is quite different from that of *E. rosseteri*. See remarks on *H. rauschi*.

Hymenolepis pusilla Podesta and Holmes, 1970
Site: small intestine (posterior third)
Hosts: *Aythya affinis* (1,2,3)
A. valisineria (1)
Dist: Alta
Records: 1. Podesta and Holmes 1970; 2. Hair and Holmes 1975; 3. Bush and Holmes 1986a,b
Remarks: Podesta and Holmes (1970) also completed the life cycle of this species in *A. affinis* and *A. valisineria*.

Hymenolepis rauschi Schiller, 1950
Site: small intestine
Host: *Anas rubripes*
Dist: NB
Records: 1. McLaughlin and Burt 1973; 2. McLaughlin and Burt 1979a,b
Remarks: Yamaguti (1959) placed *H. rauschi* in the genus *Echinocotyle* Blanchard (1891) on the basis of its armed suckers. Schmidt (1986), apparently following Yamaguti, also included *H. rauschi* in *Echinocotyle*. The sucker armature in *H. rauschi* resembles that seen in many *Diorchis* species and is quite different from that of *E. rosseteri*, the type species of *Echinocotyle*. McLaughlin and Burt (1979a) suggested that *Echinocotyle* should include only those species whose sucker armature resembled that of *E. rosseteri* and returned *H. rauschi* to the genus *Hymenolepis s.l.*

Hymenolepis spinocirrosa Podesta and Holmes, 1970
Site: small intestine (posterior third)
Hosts: *Aythya affinis* (1,2,4)
A. americana (1)
A. marila (3)
A. valisineria (1)
Dist: Alta, NB
Records: 1. Podesta and Holmes 1970 (Alta); 2. Hair and Holmes 1975 (Alta); 3. McLaughlin and Burt 1979a,b (NB); 4. Bush and Holmes 1986a,b (Alta)
Remarks: Podesta snd Holmes (1970) also completed the life cycle of this species in *A. affinis*, *A. americana* and *A. valisineria*.

Hymenolepis trombidacantha Podesta and Holmes, 1970
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Podesta and Holmes 1970
Remarks: Podesta and Holmes (1970) also completed the life cycle of this species in *A. affinis*.

Hymenolepis spp.
Site: intestine
Hosts: *Aix sponsa* (12)
Anas acuta (1,6)
A. discors (1)
A. platyrhynchos (6)
A. rubripes (7,12)
Anatidae (11,16)
Aythya affinis (8,15)
A. valisineria (4)
Bucephala albeola (12)
Lophodytes cucullatus (10)
Melanitta fusca (14)
M. nigra (14)
M. perspicillata (14)
Branta bernicla (9)
B. canadensis (12)
Domestic goose (3)
Cygnus buccinator (2,5,13)
C. columbianus (13)
Dist: Alta, BC, Man, NB, Nfld, NWT, Ont, Que
Records: 1. Swales 1933 (Alta); 2. Cowan 1946 (BC); 3. Schad 1962 (Que); 4. Cornwell and Cowan 1963 (Man); 5. MacNeill 1970 (BC); 6. Crichton and Welch 1972 (Man); 7. McLaughlin and Burt 1973 (NB); 8. Hair and Holmes 1975 (Alta); 9. Neraasen and Holmes 1975 (NWT); 10. Bain and Threlfall 1977 (Ont);

11. MacNeil and Barnard 1978 (BC);
12. McLaughlin and Burt 1979b (NB);
13. McKelvey and MacNeill 1980 (BC);
14. Bourgeois and Threlfall 1982 (BC,NB,Nfld);
15. Bush and Holmes 1986a,b (Alta); 16. Hoeve and Scott 1988 (Que)

Microsomacanthus abortiva (von Linstow, 1904)
Syn: *Hymenolepis abortiva* von Linstow, 1904
Site: small intestine, caecum
Hosts: *Anas discors* (3)
A. platyrhynchos (3)
A. rubripes (1,3)
Aythya affinis (2,4)
Dist: Alta, NB
Records: 1. McLaughlin and Burt 1973 (NB), 2. Hair and Holmes 1975 (Alta); 3. McLaughlin and Burt 1979a,b (NB); 4. Bush and Holmes 1986a,b (Alta)
Remarks: All specimens from *Anas* spp. found in caecum; those from *Aythya affinis* occurred in the small intestine.

Microsomacanthus compressa (Linton, 1892)
Syn: *Hymenolepis compressa* (Linton, 1892)
Site: small intestine
Hosts: *Anas acuta* (1)
Aythya affinis (2)
Dist: Alta, Man
Records: 1. Buscher 1965 (Man); 2. Hair and Holmes 1975 (Alta)
Remarks: Specimens identified as *H. compressa* by McLaughlin and Burt (1973) are *H. paracompressa*.

Microsomacanthus collaris (Batsch, 1786)
Syn: *Hymenolepis collaris* (Batsch, 1786)
Site: small intestine
Hosts: *Anas rubripes* (1,2)
Aythya collaris (2)
Dist: NB
Records: 1. McLaughlin and Burt 1973; 2. McLaughlin and Burt 1979a,b

Microsomacanthus fausti (Tseng-Shen, 1932)
Syn: *Hymenolepis fausti* (Tseng-Shen, 1932)
Site: small intestine
Hosts: *Aythya affinis* (1,3)
A. collaris (2)
Dist: Alta, Ont
Records: 1. Hair and Holmes 1975 (Alta); 2. Noseworthy and Threlfall 1978 (Ont); 3. Bush and Holmes 1986a,b (Alta)
Remarks: Bush and Holmes (1986a,b) found only immature forms. Czaplinski and Vaucher (1977), on re-examination of the original specimens, concluded that the original description was based on fragmentary material consisting of strobilae of *Microsomacanthus paramicrosoma* Gasowska, 1931 and scolices of a different species, possibly *Microsomacanthus spiralibursata* Czaplinski, 1956. They renamed *Microsomacanthus fausti* of Spasskaja and Spasskii (1961) *Microsomacanthus baeri*.

Microsomacanthus formosoides Spasskaja and Spasskii, 1961
Syn: *Hymenolepis (Microsomacanthus) formosoides* (Spasskaja and Spasskii, 1961)
Site: small intestine
Host: *Somateria mollissima*
Dist: Nfld
Record: Bishop and Threlfall 1974

Microsomacanthus hopkinsi (Schiller, 1951)
Syn: *Hymenolepis hopkinsi* Schiller, 1951
Site: caecum
Hosts: *Aix sponsa* (7)
Anas acuta (1,6)
A. platyrhynchos (6+,7)
A. rubripes (2,4,7)
A. strepera (1)
Domestic duck (2*)
Aythya affinis (3+,5)
A. americana (3*)
A. valisineria (3+)
Dist: Alta, Man, NB
Records: 1. Buscher 1965 (Man); 2. McLaughlin and Burt 1970 (NB); 3. Podesta and Holmes 1970 (Alta); 4. McLaughlin and Burt 1973 (NB); 5. Hair and Holmes 1975 (Alta); 6. McLaughlin 1975 (Man); 7. McLaughlin and Burt 1979a,b (NB)
Remarks: *Experimental infections only. +Natural and experimental infections yielding mature specimens.

Microsomacanthus melanittae Ryjikov, 1962
Syn: *Hymenolepis melanittae* (Ryjikov, 1962)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: Bush and Holmes 1986a,b
Remarks: Only immature specimens were found.

Microsomacanthus microskrjabini Spasskii and Jurpalova, 1964
Syn: *Hymenolepis (Microsomacanthus) microskrjabini* (Spasskii and Jurpalova, 1964)

Hymenolepis microskrjabini (Spasskii and Jurpalova, 1964)
Site: small intestine
Hosts: Domestic duck (1*)
Aythya affinis (1+,2,4)
A. americana (1+)
Somateria mollissima (3)
Dist: Alta, Nfld
Records: 1. Denny 1969 (Alta); 2. Hair and Holmes 1975 (Alta); 3. Bishop and Threlfall 1974 (Nfld); 4. Bush and Holmes 1986a,b (Alta)
Remarks: *Experimental infection; only immature forms recovered. + Experimental infections producing mature cestodes.

Microsomacanthus paracompressa (Czaplinski, 1956)
Syn: *Hymenolepis paracompressa* Czaplinski, 1956 *Hymenolepis compressa* of McLaughlin and Burt (1973)
Site: small intestine
Hosts: *Anas acuta* (2)
A. platyrhynchos (2)
A. rubripes (1,2)
Aythya affinis (3)
Dist: Alta, NB
Records: 1. McLaughlin and Burt 1973 (NB); 2. McLaughlin and Burt 1979a,b (NB); 3. Bush and Holmes 1986a,b (Alta)
Remarks: Bush and Holmes (1986b) reported immature specimens only.

Microsomacanthus parvula (Kowalewski, 1904)
Syn: *Hymenolepis parvula* Kowalewski, 1904 *Kowalewskius parvula* (Kowalewski, 1904)
Site: small intestine
Hosts: *Anas rubripes* (1,4)
Aythya affinis (2,5)
A. collaris (3)
Dist: Alta, NB, Ont
Records: 1. McLaughlin and Burt 1973 (NB); 2. Hair and Holmes 1975 (Alta); 3. Noseworthy and Threlfall 1978 (Ont); 4. McLaughlin and Burt 1979a,b (NB); 5. Bush and Holmes 1985a (Alta)

Microsomacanthus recurvata Spasskaja and Spasskii, 1961
Syn: *Hymenolepis recurvata* (Spasskaja and Spasskii)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Microsomacanthus somateriae Ryjikov, 1965
Syn: *Hymenolepis (Microsomacanthus) somateriae* (Ryjikov, 1965)
Site: small intestine
Host: *Somateria mollissima*
Dist: Nfld
Record: Bishop and Threlfall 1974

Microsomacanthus spiralibursata (Czaplinski, 1956)
Syn: *Hymenolepis spiralibursata* Czaplinski, 1956
Site: small intestine
Hosts: Domestic duck (1*)
Aythya affinis (1,2)
Dist: Alta
Records: 1. Denny 1969; 2. Hair and Holmes 1975
Remarks: *Experimental infection producing mature specimens.

Microsomacanthus teresoides (Fuhrmann, 1906)
Syn: *Hymenolepis teresoides* Fuhrmann, 1906
Site: small intestine
Host: *Anas strepera*
Dist: Man
Record: Buscher 1965

Microsomacanthus tuvensis Spasskaja and Spasskii, 1961
Syn: *Hymenolepis tuvensis* (Spasskaja and Spasskii, 1961)
Site: small intestine
Hosts: Domestic duck (1*)
Aythya affinis (1+,2,3,5)
A. americana (2)
A. marila (4)
A. valisineria (2)
Melanitta fusca (2)
Dist: Alta, NB
Records: 1. Denny 1969 (Alta); 2. Podesta and Holmes 1970 (Alta); 3. Hair and Holmes 1975 (Alta); 4. McLaughlin and Burt 1979a,b (NB); 5. Bush and Holmes 1986a,b (Alta)
Remarks: *Experimental infection; only immature specimens recovered. +Mature specimens from natural and experimental infections.

Parabisaccanthes philactes (Schiller, 1951)
Site: small intestine
Hosts: *Anser albifrons*
Branta bernicla
Chen caerulescens
Dist: NWT
Record: Neraasen and Holmes 1975

Retinometra cyrtoides (Mayhew, 1925)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Bush and Holmes 1986a,b
Remarks: Immature specimens only.

Retinometra longivaginata (Fuhrmann, 1906)
Site: small intestine
Hosts: *Anser albifrons*
Branta bernicla
Chen caerulescens
Dist: NWT
Record: Neraasen and Holmes 1975

Retinometra macracanthos (von Linstow, 1877)
Site: small intestine
Host: *Bucephala clangula*
Dist: NB
Record: McLaughlin and Burt 1979a,b
Remarks: Immature specimen only.

Retinometra macrocephala (Fuhrmann, 1913)
Syn: *Hymenolepis macrocephala* Fuhrmann, 1913
Site: small intestine
Hosts: *Anas clypeata* (1)
A. discors (2)
Dist: Man
Records: 1. Buscher 1965; 2. Buscher 1966
Remarks: Synonym of *Retinometra venusta* according to Spasskaja (1966).

Retinometra pittalugai (Lopez-Neyra, 1932)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: 1. Hair and Holmes 1975; 2. Bush and Holmes 1986a,b

Retinometra venusta (Rosseter, 1897)
Site: small intestine
Host: *Anser albifrons*
Dist: NWT
Record: Neraasen and Holmes 1975

Sobolevicanthus filumferens (Brock, 1942)
Syn: *Hymenolepis filumferens* Brock, 1942
Site: small intestine
Hosts: *Anas clypeata* (1)
A. crecca (4)
A. discors (2,4)
A. rubripes (3,4)
Dist: Man, NB
Records: 1. Buscher 1965 (Man); 2. Buscher 1966 (Man); 3. McLaughlin and Burt 1973 (NB); 4. McLaughlin and Burt 1979a,b (NB)

Sobolevicanthus gracilis (Zeder, 1803)
Syn: *Hymenolepis gracilis* (Zeder, 1803)
Site: small intestine
Hosts: *Aix sponsa* (6)
Anas acuta (1)
A. americana (6)
A. discors (6)
A. rubripes (2,6)
Aythya affinis (3,7)
A. collaris (5)
Branta bernicla (4)
Chen caerulescens (4)
Dist: Alta, Man, NB, NWT, Ont
Records: 1. Buscher 1965 (Man); 2. McLaughlin and Burt 1973 (NB); 3. Hair and Holmes 1975 (Alta); 4. Neraasen and Holmes 1975 (NWT); 5. Noseworthy and Threlfall 1978 (Ont); 6. McLaughlin and Burt 1979a,b (NB); 7. Bush and Holmes 1986a (Alta)
Remarks: Bush and Holmes (1986a) recorded only immature specimens.

Sobolevicanthus kenaiensis (Schiller, 1952)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Bush and Holmes 1986a

Sobolevicanthus octacantha (Krabbe, 1869)
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Bush and Holmes 1986a
Remarks: Immature specimens only.

Sobolevicanthus stolli (Brock, 1941)
Syn: *Hymenolepis stolli* Brock, 1941
Site: small intestine
Host: *Anas acuta*
Dist: Man
Record: Buscher 1965

Sobolevicanthus sp.
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975

Tschertkovilepis krabbei (Kowalewski, 1895)
Site: small intestine
Hosts: *Anser albifrons*
Branta bernicla
Chen caerulescens
Dist: NWT
Record: Neraasen and Holmes 1975
Remarks: Schmidt (1986) considered the genus *Tschertkovilepis* a synonym of *Microsomacanthus*. *T. krabbei* was not listed. Yamaguti (1959) listed it as a synonym of *Tschertkovilepis conscripta* Railliet et Henry, 1909.

Tschertkovilepis setigera (Froelich, 1789)
Site: small intestine
Hosts: *Anser albifrons*
Branta bernicla
Chen caerulescens
Dist: NWT
Record: Neraasen and Holmes 1975
Remarks: Transferred by Schmidt (1986) to *Microsomacanthus*.

Wardium creplini (Krabbe, 1869)
Site: small intestine
Hosts: *Anser albifrons* (1)
Branta canadensis (2)
Dist: NB, NWT
Records: 1. Neraasen and Holmes 1975 (NWT); 2. McLaughlin and Burt 1979a,b (NB)
Remarks: Schmidt (1986) listed the genus *Wardium* (Mayhew, 1925) as a synonym of *Dicranotaenia* (Railliet, 1892) and transferred this species to it.

Wardium sp.
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975

Wardoides nyrocae (Yamaguti, 1935)
Site: small intestine
Hosts: *Branta bernicla*
Chen caerulescens
Dist: NWT
Record: Neraasen and Holmes 1975
Remarks: Schmidt (1986) has included this species in *Drepanidotaenia*.

FAMILY ACOLEIDAE

Diploposthe laevis (Bloch, 1782)
Site: small intestine
Hosts: *Aythya marila* (1)
A. collaris (2,3)
Dist: NB, Ont, Que
Records: 1. Mahon 1956 (Que); 2. Noseworthy and Threlfall 1978 (Ont); 3. McLaughlin and Burt 1979a,b (NB)

FAMILY DILEPIDIDAE
SUBFAMILY DILEPIDINAE

Anomotaenia sp.
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Record: Hair and Holmes 1975

Lateriporus geographicus Cooper, 1921
Site: small intestine
Hosts: *Clangula hymealis* (2)
Somateria mollissima (1)
Dist: NWT, Que
Records: 1. Cooper 1921 (NWT); 2. Mahon 1956 (Que)

Lateriporus mathevossianae Ryjikov and Gubanov, 1962
Site: small intestine
Hosts: *Aythya affinis**
Melanitta fusca
Dist: Alta
Record: Denny, 1969
Remarks: Denny (1969) also recovered immature specimens from experimentally exposed *M. fusca* and *A. affinis*.
*Immature specimens in natural infections.

Lateriporus skrjabini Mathevossian, 1946
Site: small intestine
Hosts: *Anas acuta* (1*)
A. americana (1*)
A. discors (1*)
A. platyrhynchos (1+)
A. strepera (1*)
Domestic duck (1+)
Aythya affinis (1*,2,3)
A. americana (1*)
A. valisineria (1)
Bucephala albeola (1*)
B. clangula (1*)

Melanitta fusca (1*)
Oxyura jamaicensis (1*)
Dist: Alta
Records: 1. Denny 1969; 2. Hair and Holmes 1975; 3. Bush and Holmes 1986a,b
Remarks: *Immature specimens only from natural infections. +Immature specimens only following experimental infections. 'Mature specimens from natural and experimental infections.

Lateriporus teres (Krabbe, 1869)
Site: duodenum and small intestine
Host: *Somateria mollissima*
Dist: Nfld
Records: 1. Threlfall 1968; 2. Bishop and Threlfall 1974

Oligorchis sp.
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: Bush and Holmes 1986a,b
Remarks: Immature specimens only; apparently an undescribed species (Bush and Holmes 1986a).

Platyscolex ciliata (Fuhrmann, 1913)
Syn: *Anomotaenia ciliata* Fuhrmann, 1913
Site: small intestine
Hosts: *Anas acuta* (1)
A. clypeata (1)
A. discors (2)
A. rubripes (3,5)
A. strepera (1)
Bucephala clangula (5)
Branta bernicla (4)
Chen caerulescens (4)
Dist: Man, NB, NWT
Records: 1. Buscher 1965 (Man); 2. Buscher 1966 (Man); 3. McLaughlin and Burt 1973 (NB); 4. Neraasen and Holmes 1975 (NWT); 5. McLaughlin and Burt 1979b (NB)

Unciunia sp.
Site: small intestine
Host: *Aythya affinis*
Dist: Alta
Records: Bush and Holmes 1986a,b
Remarks: Apparently an undescribed species (Bush and Holmes 1986a).

Unidentified Cestodes
Site: intestine
Hosts: *Anas acuta* (2)
A. americana (2)
A. clypeata (2)
A. crecca (2,4)
A. discors (2,4)
A. platyrhynchos (2,3)
A. rubripes (7)
A. strepera (2)
Anatidae (6)
Aythya affinis (2,9)
A. collaris (8)
Bucephala clangula (7)
Cygnus columbianus (1)
Lophodytes cucullatus (5)
Melanitta fusca (2)
Dist: Alta, BC, NB, Ont, Sask
Records: 1. Wickware 1930 (Ont); 2. Swales 1934 (Alta); 3. Wobeser 1974 (Sask); 4. Turner and Threlfall 1975 (NB); 5. Bain and Threlfall 1977 (Ont); 6. MacNeil and Barnard 1978 (BC); 7. Mahoney and Threlfall 1978 (NB,Ont); 8. Noseworthy and Threlfall 1978 (Ont); 9. Bush and Holmes 1986a,b (Alta)

HOST PARASITE LIST

ORDER ANSERIFORMES
SUBORDER ANSERES

FAMILY ANATIDAE
SUBFAMILY ANATINAE

Tribe Anatini

Anas acuta L.
- Northern Pintail
- Syn: *Dafila acuta* (L.)

Aploparaksis furcigera (Man)
Cloacotaenia megalops (Man, Sask)
Diorchis bulbodes (Man)
D. nyrocae (Man)
Echinocoytle rosseteri (Man)
Fimbriaria fasciolaris (Man, NB)
Gastrotaenia cygni (Man)
Hymenolepis anatina (Man)
Hymenolepis sp. (Man)
Lateriporus skrjabini (Alta)
Microsomacanthus compressa (Man)
M. hopkinsi (Man)
M. paracompressa (NB)
Platyscolex ciliata (Man)
Sobolevicanthus gracilis (Man)
S. stolli (Man)
Cestodes (Alta)

Anas americana Gmelin
- American Wigeon (Gmelin)
- Syn: *Mareca americana*

Cloacotaenia megalops (NB)
Gastrotaenia cygni (Man)
Lateriporus skrjabini (Alta)
Sobolevicanthus gracilis (NB)
Cestodes (Alta)

Anas clypeata L.
- Northern Shoveler
- Syn: *Spatula clypeata* (L.)

Aploparaksis veitchi (Man)
Cloacotaenia megalops (Man)
Diorchis nyrocae (Man)
Echinocotyle rosseteri (Man, Que)
Fimbriaria fasciolaris (Man)
Gastrotaenia cygni (Man)
Platyscolex ciliata (Man)
Retinometra macrocephala (Man)
Sobolevicanthus filumferens (Man)
Cestodes (Alta)

Anas crecca L.
- Green-winged Teal
- Syn: *Anas crecca carolinensis*

Echinocotyle rosseteri (NB, Que)
Fimbriaria fasciolaris (NB)
Gastrotaenia cygni (Man)
Sobolevicanthus filumferens (NB)
Cestodes (Alta, NB, Que)

Anas discors L.
- Blue-winged Teal
- Syn: *Querquedula discors* (L.)

Aploparaksis furcigera (Man, NB)
Cloacotaenia megalops (Man, NB)
Diorchis microcirrosa (NB)
D. nyrocae (Man)
Echinocotyle rosseteri (Man, NB, Que)
Fimbriaria fasciolaris (Man, NB)
Gastrotaenia cygni (Man)
Hymenolepis anatina (Man)
Lateriporus skrjabini (Alta)
Microsomacanthus abortiva (NB)
Platyscolex ciliata (Man)
Retinometra macrocephala (Man)
Sobolevicanthus filumferens (Man, NB)
S. gracilis (NB)
Cestodes (Alta, NB, Que)

Anas platyrhynchos L.
- Mallard

Cloacotaenia megalops (Man, Sask)
Dicranotaenia coronula (NB)
D. nyrocae (Man)
Fimbriaria fasciolaris (Alta, Man, NB)
Gastrotaenia cygni (Man)
Hymenolepis sp. (Man)
Lateriporus skrjabini (Alta)
Ligula intestinalis (Man)
Microsomacanthus abortiva (NB)
M. hopkinsi (Man, NB)
M. paracompressa (NB)
Cestodes (Alta, Sask)

Anas rubripes Brewster
- American Black Duck

Aploparaksis furcigera (NB)
Dicranotaenia coronula (NB)
Diorchis bulbodes (NB)
Echinocotyle rosseteri (NB)
Fimbriaria fasciolaris (NB)
Hymenolepis rauschi (NB)
Hymenolepis sp. (NB)

Microsomacanthus abortiva (NB)
M. collaris (NB)
M. hopkinsi (NB)
M. paracompressa (NB)
M. parvula (NB)
Platyscolex ciliata (NB)
Sobolevicanthus filumferens (NB)
S. gracilis (NB)
Cestodes (NB, Que)

Anas strepera L.
– Gadwall
Aploparaksis furcigera (Man)
A. veitchi (Man)
Cloacotaenia megalops (Man)
Diorchis spinata (Man)
Fimbriaria fasciolaris (Alta, Man)
Gastrotaenia cygni (Man)
Lateriporus skrjabini (Alta)
Microsomacanthus hopkinsi (Man)
M. teresoides (Man)
Platyscolex ciliata (Man)
Cestodes (Alta)

Domestic ducks
– (Includes *Anas platyrhynchos domesticus*; most represent experimental infections)
Dicranotaenia coronula (Ont)
Fimbriaria fasciolaris (Alta)
Hymenolepis albertensis (Alta)
Lateriporus skrjabini (Alta)
Microsomacanthus hopkinsi (NB)
M. microskrjabini (Alta)
M. spiralibursata (Alta)
M. tuvensis (Alta)

Tribe Aythyini

Aythya affinis (Eyton)
– Lesser Scaup
Anomotaenia sp. (Alta)
Anatinella spinulosa (Alta)
Cloacotaenia megalops (Alta)
Dicranotaenia coronula (Alta)
Diorchis asiatica (Alta)
D. bulbodes (Alta)
D. excentricus (Alta)
D. inflata (Alta)
D. nyrocoides (Alta)
D. ransomi (Alta)
D. spinata (Alta)
D. stefanskii (Alta)
Diorchis sp. (Alta)
Fimbriaria fasciolaris (Alta)
Gastrotaenia cygni (Man)
Hispaniolepis arcuata (Alta)
Hymenolepis albertensis (Alta)
H. pusilla (Alta)
H. spinocirrosa (Alta)
H. trombidacantha (Alta)
Hymenolepis sp. (Alta)
Lateriporus mathevossianae (Alta)
L. skrjabini (Alta)
Microsomacanthus abortiva (Alta)
M. compressa (Alta)
M. fausti (Alta)
M. hopkinsi (Alta)
M. melanittae (Alta)
M. microskrjabini (Alta)
M. paracompressa (Alta)
M. parvula (Alta)
M. recurvata (Alta)
M. spiralibursata (Alta)
M. tuvensis (Alta)
Oligorchis sp. (Alta)
Retinometra cyrtoides (Alta)
R. pittalugai (Alta)
Sobolevicanthus gracilis (Alta)
S. kenaiensis (Alta)
S. octacantha (Alta)
Sobolevicanthus sp. (Alta)
Unciunia sp. (Alta)
Wardium sp. (Alta)
Cestodes (Alta)

Aythya americana (Eyton)
– Redhead
Fimbriaria fasciolaris (Alta)
Gastrotaenia cygni (Man)
Hymenolepis albertensis (Alta)
H. spinocirrosa (Alta)
Lateriporus skrjabini (Alta)
Microsomacanthus hopkinsi (Alta)
M. microskrjabini (Alta)
M. tuvensis (Alta)

Aythya collaris (Donovan)
– Ring-necked Duck
Aploparaksis furcigera (NB)
Dicranotaenia coronula (NB)
Diploposthe laevis (NB, Ont)
Fimbriaria fasciolaris (NB)
Microsomacanthus collaris (NB)
M. fausti (Ont)
M. parvula (Ont)
Sobolevicanthus gracilis (Ont)
Cestodes (Ont)

Aythya marila (L.)
- Greater Scaup
- Syn: *Nyroca marila* (L.)
Dicranotaenia coronula (NB)
Diploposthe laevis (Que)
Fimbriaria fasciolaris (NB)
Hymenolepis spinocirrosa (NB)
Microsomacanthus tuvensis (NB)

Aythya valisineria (Wilson)
- Canvasback
Cloacotaenia megalops (Man)
Fimbriaria fasciolaris (Alta, Man)
Gastrotaenia cygni (Man)
Hymenolepis pusilla (Alta)
H. spinocirrosa (Alta)
Hymenolepis sp. (Man)
Lateriporus skrjabini (Alta)
Microsomacanthus hopkinsi (Alta)
M. tuvensis (Alta)

Tribe Cairini

Aix sponsa (L.)
- Wood Duck
Fimbriaria fasciolaris (NB)
Hymenolepis sp. (NB)
Microsomacanthus hopkinsi (NB)
Sobolevicanthus gracilis (NB)

Tribe Mergini

Bucephala albeola (L.)
- Bufflehead
Gastrotaenia cygni (Man)
Lateriporus skrjabini (Alta)
Hymenolepis sp. (NB)

Bucephala clangula (L.)
- Common Goldeneye
Dicranotaenia coronula (NB)
Fimbriaria fasciolaris (NB)
Lateriporus skrjabini (Alta)
Platyscolex ciliata (NB)
Retinometra macracanthos (NB)
Cestodes (Ont)

Clangula hymealis (L.)
- Oldsquaw
Lateriporus geographicus (Que)

Lophodytes cucullatus (L.)
- Hooded Merganser
Hymenolepis sp. (Ont)
Schistocephalus solidus (Ont)
Cestodes (Ont)

Melanitta fusca (L.)
- White-winged Scoter
- Syn: *Melanitta deglandi* (Bonaparte)
Cloacotaenia megalops (BC)
Hymenolepis albertensis (Alta)
Hymenolepis sp. (BC, NB, Nfld)
Lateriporus mathevossianae (Alta)
L. skrjabini (Alta)
Microsomacanthus tuvensis (Alta)
Cestodes (Alta)

Melanitta nigra (L.)
- Black Scoter
Fimbriarioides sp. (BC, NB, Nfld)
Hymenolepis sp. (BC, NB, Nfld)

Melanitta perspicillata (L.)
- Surf Scoter
Fimbriarioides sp. (BC, NB, Nfld)
Hymenolepis sp. (Alta, BC, NB, Nfld)

Mergus merganser L.
- Common Merganser
- Syn: *Mergus americanus* Cassin
Mergus merganser americanus Cassin
Fimbriaria fasciolaris (BC)
Ligula intestinalis (BC, Que)
Schistocephalus solidus (BC)

Somateria mollissima (L.)
- Common Eider
- Syn: *Somateria mollissima* var. *nigra* Bonaparte
Aploparaksis sp. (NWT)
Fimbriarioides intermedia (Nfld, NWT)
Lateriporus geographicus (NWT)
L. teres (Nfld)
Microsomacanthus formosoides (Nfld)
M. microskrjabini (Nfld)
M. somateriae (Nfld)

Tribe Oxyurini

Oxyura jamaicensis (Gmelin)
- Ruddy Duck
Lateriporus skrjabini (Alta)

SUBFAMILY ANSERINAE

Tribe Anserini

Anser albifrons (Scopoli)
- Greater White-fronted Goose
Drepanidotaenia barrowensis (NWT)
Parabisaccanthes philactes (NWT)
Retinometra longivaginata (NWT)

R. venusta (NWT)
Tschertkovilepis krabbei (NWT)
T. setigera (NWT)
Wardium creplini (NWT)

Branta bernicla (L.)
– Brant
– Syn: *Branta bernicla nigricans* (Lawrence)
Dicranotaenia coronula (NWT)
Diorchis stefanskii (NWT)
Drepanidotaenia barrowensis (NWT)
D. lanceolata (NWT)
Fimbriaria fasciolaris (NWT)
Hymenolepis sp. (NWT)
Parabisaccanthes philactes (NWT)
Platyscolex ciliata (NWT)
Retinometra longivaginata (NWT)
Sobolevicanthus gracilis (NWT)
Tschertkovilepis krabbei (NWT)
T. setigera (NWT)
Wardoides nyrocae (NWT)

Branta canadensis (L.)
– Canada Goose
Drepanidotaenia lanceolata (NB)
Hymenolepis sp. (NB)
Wardium creplini (NB)

Chen caerulescens (L.)
– Snow Goose
– Syn: *Chen caerulescens caerulescens* (L.)
Chen hyperborea atlantica Kennard
Cloacotaenia megalops (NWT)
Dicranotaenia coronula (NWT)
Diorchis stefanskii (NWT)
Drepanidotaenia barrowensis (NWT)
D. lanceolata (NWT, Que)
Fimbriaria fasciolaris (NWT)
Parabisaccanthes philactes (NWT)
Platyscolex ciliata (NWT)
Retinometra longivaginata (NWT)
Sobolevicanthus gracilis (NWT)
Tschertkovilepis krabbei (NWT)
T. setigera (NWT)
Wardoides nyrocae (NWT)

Domestic geese
Hymenolepis sp. (Que)

Tribe Cygnini

Cygnus buccinator Richardson
– Trumpeter Swan
– Syn: *Cygnus cygnus buccinator* Richardson
Hymenolepis sp. (BC)

Cygnus columbianus (Ord)
– Tundra Swan
– Syn: *Cygnus columbianus columbianus* (Ord)
Hymenolepis sp. (BC)
Cestodes (Ont)

Unspecified Anatidae
Hymenolepis sp. (BC, Que)
Fimbriaria fasciolaris (Alta, Que)
Diorchis sp. (Que)
Cestodes (BC)

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